PERSONAL INFORMATION

Valeria Lanzilotto

https://orcid.org/0000-0001-7132-6380

WORK EXPERIENCE

April 2019 - present

Researcher (Ricercatore a Tempo Determinato di tipo A)

Sapienza Università di Roma
Department of Chemistry

- Appointment as lecturer in "General and Inorganic Chemistry" (SSD CHIM/03) for the Bachelor Degree Program in Agro-industrial Biotechnologies (from 2nd semester A. A. 2019 - 2020);

Sept 2018 - April 2019

Postdoc Research Associate

Elettra Sincrotrone Trieste, Italy
Micro & Nano Carbon Laboratory

- Running, up-grading and maintenance of the Micro & Nano Carbon Laboratory (Responsibile: Dr. Andrea Goldoni) including the CNR-IOM/Elettra joint Laboratory for Microscopy (CNR-IOM responsible: Dr. Luca Floreano). Instrumentation: multi-techniques apparatus for surface science experiments (STM + ARUPS; XPS + UPS) with all facilities needed for *in-situ* sample preparation;
- Continuation of the research line developed at Uppsala University focused on the surface-confinement of carbon nitride building-blocks with particular care towards the water/organic interface both at the solid state (UHV) and in aqueous solution (XPS liquid micro-jet technique; beamtimes at SOLEIL Synchrotron).

Aug 2017 - April 2018
Aug 2015 - Aug 2017

Researcher
Postdoc

Uppsala University (UU), Sweden
Department of Physics and Astronomy (UU) & BESSYII Synchrotron (Berlin)

- Developing of a new collaborative research line based on the use of surface science methods for understanding the photo-catalytic properties of polymeric carbon nitride materials, in particular towards the water-splitting reaction. Project description: electronic/morphological characterization (STM, XPS/UPS, NEXAFS) of carbon nitride model compounds in form of thin films and at the interface with water molecules under UV/vis irradiation. Main collaborators: Dr. Carla Puglia and Barbara Brena;
- Collaboration within *on-going* projects related to other photo-active systems: perovskite solar cells; water/TiO_2 interfaces; donor-π-acceptor organic dyes;
- Involvement in the research activity/commissioning of new experimental end-stations devoted to time-resolved/pump-probe photoemission spectroscopy experiments, either based on femtosecond (HELIOS Lab, UU) and picosecond pulsed light sources (PM4 beamline @ BESSYII Synchrotron, Berlin; March-Dec 2017);
- Running, up-grading and maintenance of the "Surface Physics" Laboratory at the "Division of Molecular and Condensed Matter Physics" of UU (Reference: Prof. Anders Sandell);
- Assistant-lecturer in "Surface Physics" (Department of Physics and Astronomy, Master Degree Program; Responsible: Prof. Anders Sandell). Front lessons and Lab demonstrations. Topics: scanning probe microscopy; photoelectron and X-ray absorption spectroscopies; (Feb 2017);
- Co-supervisor of Teng Zhang (PhD candidate at UU); (Feb 2017 - Sept 2018);
- Mentoring of two PhD students;

July 2012 - June 2015

Postdoc

Università degli Studi di Firenze, Italy
Department of Chemistry; Laboratory of Molecular Magnetism (LaMM)

- Appointment to the FIRB project "Molecular nanomagnets on metallic and magnetic substrates for applications in molecular spintronics" (FIRB 2011, prot. n. RBAP11RWN. Responsible: Prof. Roberta Sessoli). Project description: preparation and characterization of novel nano-structured materials based on the coupling of Single Molecule Magnets (SMM) with metal/magnetic surfaces and insulating layers. By combining the use of microscopy and spectroscopic techniques, several issues related with the transferring of volatile SMMs on surfaces have been addressed: from their structural integrity to the surface-mediated molecular magnetism (STM, XPS, UPS and XMCD);
- "Cultore della Materia" for the scientific sector "General and Inorganic Chemistry" (SSD CHIM/03);
- Mentoring of four PhD students;

EDUCATION AND TRAINING

2009 - 2011

PhD in Nanotechnology

Università degli Studi di Trieste, Italy
Department of Physics & Elettra Synchrotron & CNR-IOM TASC Laboratory;

- Thesis: "*Self-assembling and charge transfer properties of thin organic films*". Project description: structural and electronic characterization of organic-inorganic interfaces used as basic components in organic electronic devices: (i) overlayers of semiconductor molecules on the technologically relevant TiO_2(110) surface and (ii) single molecule junctions. For the former systems, a full description of the ordering and charge transfer properties has been obtained through a multi-technique approach based on scanning tunnelling microscopy (STM) and synchrotron-based spectroscopies, i.e. X-ray, UV and resonant photoemission (XPS/UPS/ResPES) and X-ray Absorption (XAS). On the other hand, the study of the structural and transport properties of single molecule junctions has required the use of the STM-based break junction technique. Supervisor: Prof. Alberto Morgante; Mentors: Dr. Luca Floreano and Prof. Silvio Modesti;
- Visiting PhD student at "Instituto de Ciencia de Materiales de Madrid" (Spain) under the supervision of Dr. Josè A. Martin-Gago: training in the STM technique; (Oct - Dec 2009)
- Participation to "HERCULES 2010 - European Research Course for Users of large Experimental Systems" organized by Université Joseph Fourier and Grenoble INP; Grenoble - Paris, France; (Feb - Mar 2010)

2006 - 2008

MSc in Chemistry *cum laude*

Sapienza Università di Roma
Department of Chemistry

- Thesis: "*Covalent Anchoring of calix[n]arenes on Si(100) and polycrystalline Cu characterized by XPS and AFM*". Supervisor: Prof. Robertino Zanoni
- Assistant for the Laboratory of Chemical Physics (Bachelor Degree Program in Chemistry; A. A. 2007-2008) and the Laboratory of Analytical Chemistry I (Bachelor Degree Program in Chemistry; A. A. 2006-2007);

2003 - 2006

BSc in Chemistry *cum laude*

Sapienza Università di Roma
Department of Chemistry

1998 - 2003

Diploma di Maturità Scientifica *with full marks*

Liceo Scientifico Statale "Evangelista Torricelli", Roma, Italy

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Spanish	B1	B1	B1	B1	B1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

Communication skills

Good communications skills gained through:
- the research activity conducted in several national and international groups with different background (from chemists to physicists; from experimentalists to theoreticians);
- the teaching activity addressed to PhD, Master and Bachelor students;
- the mentoring and super-visioning experience;
- the participation in national and international conferences;

Organisational / managerial skills

Good organisation and prioritisation skills gained through:
- the participation to and coordination of several synchrotron experiments, where the available time is usually limited to 1 week and an excellent planning is necessary for a successful experiment;
- the organization of the PhD students work;
- the writing of projects and proposal for synchrotron facilities that require to plan in great advance experiments, resources and budget costs;
- the necessity to conciliate different duties: effective research activity, writing of projects and scientific articles, teaching activity (preparation of the lectures and planning of demonstrative experiments), PhD supervision;

Job-related skills

Long-lasting expertise in the field of the Surface Science with particular interest in the preparation and characterization of hybrid organic-inorganic interfaces.

Technical skills:
- Ultra-High-Vacuum (UHV);
- Thin films preparation based on Molecular Beam Epitaxy (MBE);
- X-ray and Ultraviolet Photoemission Spectroscopy (XPS/UPS);
- Resonant Photoemission Spectroscopy (ResPES);
- Time-Resolved Photoemission Spectroscopy (TRPES);
- Near Edge X-ray Absorption Fine Structure Spectroscopy (NEXAFS);
- X-ray Magnetic Circular Dichroism (XMCD);
- Scanning Tunneling Microscopy (STM);
- XPS liquid micro-jet;

ADDITIONAL INFORMATION

Research Grants and Awards

- *"Equal Opportunities Grant 2017"* awarded by the Department of Physics and Astronomy of Uppsala University. Project: "From molecular precursors to graphitic-C_3N_4: a promising photo-catalytic material";
- "*Marie Sklodowska-Curie Actions Seal of Excellence"* award for the project proposal 796978 "HEPTAGON. On-surface control of HEPTAzine-based Graphitic carbON nitrides: a route to structurally defined photo-catalysts" submitted under the Horizon 2020's Marie Skłodowska-Curie actions call H2020-MSCA-IF-2017. This quality label is awarded to all proposals that scored more than 85%, required to receive funding from HORIZON 2020, but not funded because of limitations in the call budget.

Fellowships and scholarships

- PhD Fellowship at Università degli Studi di Trieste; Doctoral School in Nanotechnology;
- PhD Fellowship at Sapienza Università di Roma; Doctoral School in Materials Sciences (not accepted due to conflict with PhD Fellowship at Trieste University);
- Collaborative scholarship "150 ore" for the Laboratory of Chemical Physics; Department of Chemistry, Sapienza Università di Roma; (A.A. 2007/2008)
- Collaborative Scholarship "150 ore" for the Laboratory of Analytical Chemistry I; Department of Chemistry, Sapienza Università di Roma; (A.A. 2006/2007)
- Annual Scholarship awarded by "Laziodisu"; (Master degree 2006-2008)
- *"Premio di Laurea"* awarded by "Laziodisu"; (2006)
- Annual Scholarship awarded by "Laziodisu"; (Bachelor degree 2003-2006)

Invited Seminars

- *"Spectroscopic investigation on model compounds of polymeric carbon nitrides"*; Mini Symposium - First Trieste-Uppsala meeting on Photoelectron Spectroscopy - in conjunction with the PhD thesis defence of Teng Zhang - Moderator: Dr. Carla Puglia; Ångström Laboratoriet, Uppsala University, Sweden (September 2018);
- *"On-surface properties of polynuclear coordination compounds"*; Mini Symposium - Understanding advanced functional materials - in conjunction with the PhD thesis defence of Iulia Emilia Brumboiu - Moderator: Dr. Barbara Brena; Ångström Laboratoriet, Uppsala University, Sweden (May 2016)
- *"Hybrid organic-inorganic interfaces: structural, electronic and magnetic properties"* - Moderator: Dr. Philippe Sainctavit; SOLEIL Synchrotron; Paris, France (July 2014);

Contribution to conferences

- Talk: *"Angle resolved time of flight photoelectron spectroscopy @ PM4 beamline of BESSYII"*; Xtram-17: XUV time resolved advanced methods, from experiments to ab-initio modelling; Ettore Marjorana Foundation and Centre for Scientific Culture; Erice, Italy (July 2017)
- Poster: *"Magnetic bistability in a submonolayer of sublimated Fe4 Single Molecule Magnets"*; Magnet 2015; Bologna, Italy (Feb 2015)
- Poster: *"UHV sublimation of Tetrairon SMMs on surfaces: an STM and spectroscopic characterization"*; 575-WE-Heraesus Seminar: Functional Metalorganics and Hybrids; Bad Honnef, Germany (Nov 2014)
- Talk: *"Fe4 Single Molecule Magnets on Surfaces: Spectroscopic, Morphological and DFT Investigation"*; ECOSS30 - European Conference on Surface Science; Antalya, Turkey (Sept 2014)
- Talk: *"Magnetic, electronic and structural properties of Fe4 Single Molecule Magnets sublimated on surfaces"*; SINFO II - 2nd Workshop on Surfaces, INterfaces and Functionalization Processes in Organic Compounds and Applications; Trieste, Italy (Jun 2014)
- Poster: *"Structural and electronic characterization of a highly ordered monolayer of SMMs evaporated on the Au(111) surface"*; ECMM 2013 - 4th European Conference on Molecular Magnets; Karlsruhe, Germany (Oct 2013)
- Poster: *"Toward the assembly of magnetic molecules on LSMO manganites"*; SpinOS 2012 - 4th Meeting on Spins in Organic Semiconductor; London; UK (Sept 2012)
- Talk: *"Charge transfer at the interface with the TiO2(110) surface: a comparative study between perylene and PTCDI"*; XX Convegno SILS (Italian Synchrotron Radiation Society); Arcavacata di Rende (CS); Italy (July 2012)
- Talk: *"Charge transfer at the interface with the TiO2(110) surface: a comparative study between perylene and PTCDI"*; SINFO - Workshop on Surfaces, INterfaces and Functionalization Processes in Organic Compounds and Applications; Parma, Italy (Jun 2012)

Publications 27 papers, 1 book chapter, 2 journal front covers;
h-index 12 (Web of Science 08/05/2019)

Affiliation: Uppsala University

28) **Spectroscopic fingerprints of intermolecular H-bonding interactions in carbon nitride model compounds;** V. Lanzilotto*, J. L. Silva, T. Zhang, M. Stredansky, C. Grazioli, K. Simonov, E. Giangrisostomi, R. Ovsyannikov, M. de Simone, M. Coreno, C. M. Araujo, B. Brena* and C. Puglia;
Chem. Eur. J. ***2018****, 24, 1498 - 14206; https://doi.org/10.1002/chem.201802435*

27) **Lone pair delocalization effects within electron donor molecules: the case of triphenylamine (TPA) and its thiophene-analog (DPTA);** T. Zhang, E. Brumboiu, C. Grazioli, A. Guarnaccio, M. Coreno, M. de Simone, A. Santagata, H. Rensmo, B. Brena, V. Lanzilotto and C. Puglia;
J. Phys Chem. C ***2018****, 122, 17706-17717; http://dx.doi.org/10.1021/acs.jpcc.8b06475*

26) **Defect-induced water bilayer growth on reduced anatase TiO_2(101);** A. Schaefer, V. Lanzilotto, U. Cappel, P. Uvdal, A. Borg, A. Sandell;
Langmuir ***2018****, 34, 10856 - 10864; http://dx.doi.org/10.1021/acs.langmuir.8b01925*

25) **First layer water phases on anatase TiO_2(101);** A. Schaefer, V. Lanzilotto, U. Cappel, P. Uvdal, A. Borg, A. Sandell; *Journal Front Cover*
Surf. Sci. ***2018****, 674, 25-31; https://doi.org/10.1016/j.susc.2018.03.019*

24) **X-ray photoelectron spectroscopy for understanding molecular and hybrid solar cells;** U. B. Cappel, V. Lanzilotto, E. M. J. Johansson, T. Edvinsson and H. Rensmo;
in *Molecular Devices for Solar Energy Conversion and Storage,* ***2018****, Springer; https://doi.org/10.1007/978-981-10-5924-7_12*

23) **Partially reversible photo-induced chemical changes in a mixed-ion perovskite material for solar cells;** U. B. Cappel, S. Svantröm, V. Lanzilotto, F. Johansson; K. Aitola, B. Philippe, E. Giangrisostomi, R. Ovsyannikov, T. Leitner, A. Föhlisch, S. Svensson, N. Mårtensson, G. Boschloo, A. Lindblad, H. Rensmo;
App. Mater. Interfaces ***2017,*** *9, 34970-34978; http://dx.doi.org/10.1021/acsami.7b10643*

22) **Conclusively addressing the CoPc electronic structure: a joint gas-phase and solid state photoemission and absorption spectroscopy study;** T. Zhang, E. Brumboiu, V. Lanzilotto, J. Lüder, C. Grazioli, E. Giangrisostomi, R. Ovsyannikov, Y. Sassa, I. Bidermane, M. Stupar, M de Simone, M. Coreno, B. Ressel, M. Pedio, P. Rudolf, B. Brena and C. Puglia;
J. Phys. Chem. C ***2017****, 121, 26372-26378; http://dx.doi.org/10.1021/acs.jpcc.7b08524*

Affiliation: Università degli Studi Di Firenze

21) **The Challenge of Thermal Deposition of Coordination Compounds: Insight into the Case of an Fe4 Single Molecule Magnet;** V. Lanzilotto*, L. Malavolti, S. Ninova, I. Cimatti, L. Poggini, B. Cortigiani, M. Mannini, F. Totti, A. Cornia, R. Sessoli*;
Chem. Mater. ***2016****, 28, 7693–7702; http://dx.doi.org/10.1021/acs.chemmater.6b02696*

20) **Magnetic fingerprint of individual Fe4 molecular magnets under compression by a scanning tunnelling microscope;** J. A. J. Burgess, L. Malavolti, V. Lanzilotto, M. Mannini, S. Yan, S. Ninova, F. Totti, S. Rolf-Pissarczyk, A. Cornia, R. Sessoli, S. Loth;
Nat. Comm. ***2015****, 6, 8216; https://doi.org/10.1038/ncomms9216*

19) **Magnetic Bistability in a Submonolayer of Sublimated Fe4 Single-Molecule Magnets;** L. Malavolti, V. Lanzilotto, S. Ninova, L. Poggini, I. Cimatti, B. Cortigiani, L. Margheriti, D. Chiappe, E. Otero, Ph. Sainctavit, F. Totti, A. Cornia, M. Mannini, R. Sessoli;
Nano Lett. ***2015****, 15, 535-541; https://dx.doi.org/10.1021/nl503925h*

18) **UHV deposition and characterization of a mononuclear iron(III) β-diketonate complex on Au(111);** I. Cimatti, S. Ninova, V. Lanzilotto, L. Malavolti, L. Rigamonti, B. Cortigiani, M. Mannini, E. Magnano, F. Bondino, F. Totti, A. Cornia, R. Sessoli;
Beilstein J. Nanotechnol. ***2014****, 5, 2139-214810; doi:10.3762/bjnano.5.223*

17) **Valence Electronic Structure of Sublimated Fe4 Single-Molecule Magnets: an Experimental and Theoretical Characterization;** S. Ninova, V. Lanzilotto*, L. Malavolti, L. Rigamonti, B. Cortigiani, M. Mannini, F. Totti*, R. Sessoli; *Journal Front Cover*
J. Mater. Chem. C ***2014****, 2, 9599-9608; DOI: 10.1039/C4TC01647E*

16) **A Combined Ion Scattering, Photoemission, and DFT Investigation on the Termination Layer of a La0.7Sr0.3MnO3 Spin Injecting Electrode;** L. Poggini, S. Ninova, P. Graziosi, M. Mannini, V. Lanzilotto, B. Cortigiani, L. Malavolti, F. Borgatti, U. Bardi, F. Totti, I. Bergenti, V. A. Dediu, R. Sessoli;
J. Phys. Chem. C ***2014****, 118, 13631-13637; https://dx.doi.org/10.1021/jp5026619*

15) **Magnetism of TbPc2 SMMs on ferromagnetic electrodes used in organic spintronics;** L. Malavolti, L. Poggini, L. Margheriti, D. Chiappe, P. Graziosi, B. Cortigiani, V. Lanzilotto, F. Buatier de Mongeot, P. Ohresser, E. Otero, F Choueikani, Ph. Sainctavit, I. Bergenti, V. A. Dediu, M. Mannini, R. Sessoli;
Chem. Commun. ***2013****, 49, 11506; DOI: 10.1039/C3CC46868B*

Affiliation: Università degli Studi di Trieste & CNR-IOM TASC Laboratory

14) **Ru-Ru Pair housed in the Ruthenium Phthalocyanine: Role of a "Cage" Architecture in the Molecule Coupling with the Ag(111) Surface;** P. Alippi*, V. Lanzilotto*, A. M. Paoletti, G. Mattioli, G. Zanotti, G. Pennesi, F. Filippone, A. Cossaro, A. Verdini, A. Morgante, A. Amore Bonapasta;
Phys. Chem. Chem. Phys. ***2017, 19****, 1449-1457; DOI: 10.1039/c6cp06094c*

13) **TiO_2 Charge Donation to an Extended π-Conjugated Molecule;** V. Lanzilotto, G. Lovat, G. Fratesi, G. Bavdek, G. P. Brivio, L. Floreano;
J. Phys. Chem. Lett. ***2015****, 6, 308-313; https://dx.doi.org/10.1021/jz502523u*

12) **Densely Packed Perylene Layers on the Rutile TiO2 (110)-(1 × 1) Surface;** G. Otero-Irurueta, J. I. Martínez, G. Lovat, V. Lanzilotto, J. Méndez, M. F. López, L. Floreano, J. Á. Martín-Gago;
J. Phys. Chem. C ***2015****, 119, 7809-7816; https://dx.doi.org/10.1021/acs.jpcc.5b00851*

11) **Antiphase Boundaries Accumulation Forming a New C60 Decoupled Crystallogrohic Phase on the Rutile TiO2(110)-(1x1) Surface;** C. Sanchez-Sanchez, J. I. Martinez, V. Lanzilotto, J. Mendez, J. A. Martin-Gago, M. F. Lopez;
J. Phys. Chem. C ***2014****, 118, 27318-27324; https://dx.doi.org/10.1021/jp5070962*

10) **High resolution NEXAFS of perylene and PTCDI: A surface science approach to molecular orbital analysis;** G. Fratesi, V. Lanzilotto, S. Stranges, M. Alagia, G. P. Brivio, L. Floreano;
Phys. Chem. Chem. Phys. ***2014****, 16, 14834-14844; DOI: 10.1039/c4cp01625d*

9) **Chemistry and temperature-assisted dehydrogenation of C60H30 molecules on TiO2(110) surfaces;** C. Sánchez-Sánchez, J. I. Martínez, V. Lanzilotto, G. Biddau, B. Gómez-Lor, R. Pérez, L. Floreano, M. F. López, J. Á. Martín-Gago:
Nanoscale ***2013****, 5, 11058; DOI: 10.1039/c3nr03706a*

8) **Commensurate Growth of Densely Packed PTCDI Islands on the Rutile TiO2(110) Surface;** V. Lanzilotto, G. Lovat, G. Otero, L. Sanchez, M. F. López, J. Méndez, J. A. Martín-Gago, G. Bavdek, L. Floreano;
J. Phys. Chem. C ***2013****, 117, 12639; https://dx.doi.org/10.1021/jp402852u*

7) **Azimuthal Dichroism in Near-Edge X-ray Absorption Fine Structure Spectra of Planar Molecules;** G. Fratesi, V. Lanzilotto, L. Floreano, G. P. Brivio;
J. Phys. Chem. C ***2013****, 11, 6632; https://dx.doi.org/10.1021/jp312569q*

6) **Weakly Interacting Molecular Layer of Spinning C60 Molecules on TiO2 (110) Surfaces;** C. Sánchez-Sánchez, V. Lanzilotto, C. Gonzalez, A. Verdini, P. L. de Andres, L. Floreano, M. F. López, J. A. Martín-Gago;
Chem. Eur. J. ***2012****, 18, 7382; DOI: 10.1002/chem.201200627*

5) **Planar Growth of Pentacene on the Dielectric TiO2(110) Surface;** V. Lanzilotto, C. Sánchez-Sánchez, G. Bavdek, D. Cvetko, M. F. López, J. A. Martín-Gago, L. Floreano;
J. Phys. Chem. C ***2011,*** *115, 4664-4672; https://dx.doi.org/10.1021/jp111011z*

Affiliation: Sapienza Università di Roma

4) **C-C bond insaturation degree in monosubstituted ferrocenes for molecular electronics investigated by a combined NEXFAS, XPS and DFT approach;** A. Boccia, V. Lanzilotto, A. G. Marrani, R. Zanoni, S. Stranges, M. Alagia, G. Fronzoni, P. Decleva;
J. Chem. Phys. ***2012,*** *136, 134308; https://doi.org/10.1063/1.3698283*

3) **Preparation, Reactivity and Controlled Release of SAMs of Calix[4,6]arenes and Calix[6]arene-Based Rotaxanes and Pseudorotaxanes Formed on Polycrystalline Cu;** A. Boccia, V. Lanzilotto, V. Di Castro, R. Zanoni, L. Pescatori, A. Arduini, A. Secchi;
Phys. Chem. Chem. Phys. ***2011,*** *13, 4452-4462; DOI: 10.1039/c0cp01921f*

2) **Surface grafting and reactivity of calixarene-based receptors and pseudorotaxanes on Si(100);** A. Boccia, V. Lanzilotto, R. Zanoni, L. Pescatori, A. Arduini, A. Secchi;
Phys. Chem. Chem. Phys. ***2011****, 13, 4444-4451; DOI: 10.1039/c0cp01916j*

1) **Selective Assembling of Calixarenes and Pseudorotaxanes on Si(100) and Polycrystalline Copper;** A. Boccia, V. Lanzilotto, V. Di Castro, R. Zanoni, A. Arduini, L. Pescatori, A. Secchi;
J. Nanosci. Nanotechnol. ***2011****, 11, 9333-9339; https://doi.org/10.1166/jnn.2011.4320*